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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/862,683	05/22/2001	John A. Simonetti	72162-250779	8710

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EXAMINER

KIBLER, VIRGINIA M

ART UNIT	PAPER NUMBER
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2623

DATE MAILED: 06/21/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/862,683

Applicant(s)

SIMONETTI, JOHN A.

Examiner

Virginia M Kibler

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-104 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-104 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 May 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- 1) ☐ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. ____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 2,3.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statement filed 5/22/01 fails to comply with 37 CFR 1.98(a)(3) because it does not include a concise explanation of the relevance, as it is presently understood by the individual designated in 37 CFR 1.56(c) most knowledgeable about the content of the information, of each patent listed that is not in the English language. It has been placed in the application file, but the information referred to therein has not been considered.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-5, 9, 11, 13, 15-19, 22-42, 48, 54-57, 61, 63, 65, 67-71, 74-93, and 99 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lindsay et al. (6,280,573) in view of Hopkins et al. (5,576,480).

Regarding claims 1 and 54, Lindsay et al. ("Lindsay") discloses filling a pore and defect with a liquid, applying a differential pressure across the material web so as to remove the liquid from the pore and defect (Col. 1, lines 5-13; Col. 3, lines 10-37; Figure 1), capturing an image of the material web after the differential pressure has been applied (Col. 7, lines 5-7 and 27-53; Col. 16, lines 13-19), and identifying the defect based on the image (Col. 3, lines 10-37; Col. 16, lines 13-22). Lindsay does not appear to expressly state that the differential pressure is between the

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defect bubble point pressure and the pore bubble point pressure. However, Hopkins et al. ("Hopkins") teaches that it is known to fill a pore and defect with a liquid, apply a differential pressure across the material so as to remove the liquid from the pore or defect wherein the differential pressure is between the defect bubble point pressure and the pore bubble point pressure (Col. 1, lines 20-60). Lindsay and Hopkins are combinable because they are from the same field of endeavor of porous material inspection. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to have modified the differential pressure disclosed by Lindsay to expressly recognize being between the defect bubble point pressure and pore bubble point pressure. The motivation for doing so would have been because this requirement for the bubble test is well known in the art (Col. 1, lines 36-45) and allows for the detection of defects.

Regarding claim 16, the arguments analogous to those presented above for claim 1 are applicable to claim 16. Lindsay discloses placing a portion of the continuous material web in contact with a differential pressure source (Figure 1) applying a vacuum pressure to a continuous web material (Col. 15, lines 11-35). Hopkins discloses the differential pressure being higher than the bubble point pressure for the defect and lower than the bubble point pressure for the pore (Col. 1, lines 20-60).

Regarding claims 17 and 69, the arguments analogous to those presented above for claim 1 are applicable to claims 17 and 69. Lindsay discloses a processor configured to determine the location of the defect based on the image (Col. 7, lines 27-53; Col. 16, lines 13-63).

Regarding claim 41, the arguments analogous to those presented above for claim 17 are applicable to claim 41. Lindsay discloses a camera to capture a thermal image of a portion of the

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material web after the differential pressure has been applied across the material web (Col. 7, lines 27-53) and the temperature of a portion of the material web proximate the defect changes when the liquid is removed from the defect (Col. 7, lines 27-53). Lindsay discloses applying a vacuum differential pressure across the web (Col. 1, lines 54-67; Col. 15, lines 11-35), but does not disclose a vacuum roller. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to include a vacuum roller. Applicant has not disclosed that a vacuum roller provides an advantage, is used for a particular purpose, or solves a stated problem. One of ordinary skill in the art, furthermore, would have expected Applicant's invention to perform equally well with either the vacuum disclosed by Lindsay or a vacuum roller because both perform the same function of applying a differential pressure to displace the liquid. Therefore, it would have been obvious to one of ordinary skill in the art to modify Lindsay and Hopkins to obtain the invention as specified in claim 41.

Regarding claims 42, 48, 93 and 99, the arguments analogous to those presented above for claim 17 are applicable to claims 42, 48, 93 and 99. Lindsay discloses calculating a current location of the defect, transmitting data relating to the current location to a post-processing device, and causing a post-processing device to effect a repair at the current location of the defect (Col. 3, lines 22-37; Col. 16, lines 13-63).

Regarding claims 2, 3, 55, and 56, Lindsay discloses applying a vacuum pressure to the first surface of the material web (Col. 1, lines 54-67; Col. 15, lines 11-35; Figure 1). The arguments analogous to those presented above for claim 41 are applicable to claims 3 and 56.

Regarding claims 4 and 57, Lindsay discloses applying a gaseous pressure to the first surface of the material web (Col. 1, lines 5-24; Col. 15, lines 11-35).

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Regarding claim 5, the arguments analogous to those presented above for claim 16 are applicable to claim 5.

Regarding claims 9 and 61, Lindsay discloses capturing an image to detect a defect (Col. 7, lines 27-53), but does not appear to disclose comparing the image to a known image. However, it would have been obvious to one of ordinary skill in the art to have modified the defect detection disclosed by Lindsay to include comparing the image to a known image because it is a well known methodology routinely utilized in the art for the detection of defects.

Regarding claims 11, 13, 63, and 65, the arguments analogous to those presented above for claim 41 are applicable to claims 11, 13, 63, and 65.

Regarding claims 15, 31, 32, 67, 83, and 84, Lindsay and Hopkins do not appear to recognize repeating the process of locating defects. However, it is well known and routinely utilized in the art of defect detection. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have modified the method of detecting defects to include repeating the process because it increases the reliability of the inspection process.

Regarding claim 68, Lindsay discloses the web material as a non-woven mat (Col. 9, lines 1-2).

Regarding claims 18 and 70, Lindsay discloses a processor configured to receive data related to the image and to identify a portion of the image corresponding to the defect based on the data (Col. 3, lines 10-36; Col. 7, lines 27-53; Col. 16, lines 13-63).

Regarding claims 19 and 71, Lindsay discloses determining a current location of the defect on the material web based on data related to a location within the image of a portion of the

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image showing the defect and data related to the direction of travel of the material web (Col. 3, lines 10-21; Col. 7, lines 27-53; Col. 16, lines 13-63).

Regarding claims 22, 23, 74, and 75, Lindsay discloses capturing a thermal image of a portion of the web using an infrared camera (Col. 7, lines 27-53).

Regarding claims 24 and 76, the arguments analogous to those presented above for claim 13 are applicable to claims 24 and 76.

Regarding claims 25 and 77, the arguments analogous to those presented above for claim 23 are applicable to claims 25 and 77.

Regarding claims 26 and 78, Lindsay discloses capturing a photographic image but does not specify a color image. However, this is routinely implemented in the art of defect detection. Therefore, it would have been obvious to one of ordinary skill in the art to have modified the image disclosed by Lindsay to specify a color image because it is well known in the art and provides three times as much data than gray level images, thereby allows a much more robust segmentation toward lighting conditions and a better accuracy with regard to the extracted regions.

Regarding claims 27-30 and 79-82, Lindsay discloses applying a liquid to the web but does not appear to disclose the details. At the time of the invention, it would have been obvious to a person of ordinary skill in the art specify a means to apply the liquid to the web including a first and second roller. Applicant has not disclosed that the roller provides an advantage, is used for a particular purpose, or solves a stated problem. One of ordinary skill in the art, furthermore, would have expected Applicant's invention to perform equally well with either applying the liquid as disclosed by Lindsay or submerging the web using rollers because both perform the

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same function of applying a liquid to the web. Therefore, it would have been obvious to one of ordinary skill in the art to modify Lindsay and Hopkins to obtain the invention as specified in claims 27-30 and 79-82.

Regarding claims 33-35 and 85-87, Lindsay discloses applying a vacuum differential pressure across the web (Col. 1, lines 54-67; Col. 15, lines 11-35), but does not disclose a vacuum roller. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to include a vacuum roller including the specified details. Applicant has not disclosed that a vacuum roller provides an advantage, is used for a particular purpose, or solves a stated problem. One of ordinary skill in the art, furthermore, would have expected Applicant's invention to perform equally well with either the vacuum disclosed by Lindsay or a vacuum roller because both perform the same function of applying a differential pressure to displace the liquid. Therefore, it would have been obvious to one of ordinary skill in the art to modify Lindsay and Hopkins to obtain the invention as specified in claims 33-35 and 85-87.

Regarding claims 36 and 88, the arguments analogous to those presented above for claim 4 are applicable to claims 36 and 88.

Regarding claims 37 and 89, Lindsay discloses the differential pressure source changes the temperature of the pressurized gas prior to applying it to the first surface of the material web (Col. 7, lines 27-53; Col. 16, lines 11-35).

Regarding claims 38 and 90, Lindsay discloses a bubble of gas encased in the liquid is produced on a surface of the material web at a location corresponding to the defect when the differential pressure is applied across the material web (Col. 8, lines 29-49).

Regarding claims 39 and 91, the arguments analogous to those presented above for claim 9 are applicable to claims 39 and 91.

Regarding claims 40 and 92, the arguments analogous to those presented above for claim 42 is applicable to claims 40 and 92.

4. Claims 6-8, 20, 21, 58-60, 72, and 73 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lindsay et al. (6,280,573) and Hopkins et al. (5,576,480) as applied to claims 1, 19, 54, and 71 above, and further in view of Karjanmaa (WO 00/45156).

Regarding claims 6-8 and 58-60, Lindsay and Hopkins do not appear to recognize placing a mark on the web. However, Karjanmaa discloses placing a mark over a detected defect on a web (Page 2, lines 22-30). While Karjanmaa does not expressly indicate placing the mark near an edge, it would have been obvious in light of his disclosure to specify the location mark near an edge depending on the location of the defect. Lindsay, Hopkins, and Karjanmaa are combinable because they from the same field of endeavor of defect detection. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to have modified the detection of the defects disclosed by Lindsay and Hopkins to include marking the defect. The motivation for doing so would have been because it is well known in the art and provides a clear indication of the location of the defects. Therefore, it would have been obvious to combine Lindsay and Hopkins with Karjanmaa to obtain the invention as specified in claims 6-8 and 58-60.

Regarding claims 20, 21, 72, and 73, the arguments analogous to those presented above for claim 6 are applicable to claims 20, 21, 72, and 73. Karjanmaa discloses placing a mark over

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a detected defect, thereby a post-processing device is configured so that it may be moved into contact with the material web.

5. Claims 44-47, 50-53, 95-98, and 101-104 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lindsay et al. (6,280,573) and Hopkins et al. (5,576,480) as applied to claims 42, 48, 93, and 99 above, and further in view of McHenry et al. (5,672,388).

Regarding claims 44-47, 50-53, 95-98, and 101-104, Lindsay discloses localized leak reduction means in response to the defect detection (Col. 3, lines 10-37), but does not specify repairing by moving into contact with web. However, McHenry discloses that it is known include repairs by contacting the material to selectively seal defects including adhesive, affixing a piece of material to cover the defect, and heating a portion (Abstract; Col. 3, lines 15-32; Col. 6, lines 3-21). Lindsay, Hopkins, and McHenry are combinable because they are from the same field of endeavor of defect detection. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to have modified the detection of defects disclosed by Lindsay and Hopkins to including repairing by moving into contact. The motivation for doing so would have been because it will expand the versatility of the system to include selectively sealing defects by controllably altering the pore size. Therefore, it would have been obvious to combine Lindsay and Hopkins with McHenry to obtain the invention as specified in claims 44-47, 50-53, 95-98, and 101-104.

6. Claims 10, 12, 43, 49, 62, 64, 94, and 100 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lindsay et al. (6,280,573) and Hopkins et al. (5,576,480) as applied to claims 1, 11, 42, 48, 54, 63, 93 and 99 above, and further in view of Fujita (6,535,621).

Regarding claims 10, 12, 62, and 64, Lindsay and Hopkins do not appear to expressly disclose characterizing the image as a plurality of pixels. However, Fujita discloses characterizing the image as a plurality of pixels and assigning each of the pixels a numerical value based on a portion of the image corresponding to the pixel (Abstract; Figure 15). Lindsay, Hopkins, and Fujita are combinable because they are from the same field of endeavor of defect detection. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to have modified the detection of defects using the image disclosed by Lindsay and Hopkins to include characterizing the image as a plurality of pixels and assigning each pixel a value. The motivation for doing so would have been because it is well known in the art and provides a reliable method of locating the defects. Therefore, it would have been obvious to combine Lindsay and Hopkins with Fujita to obtain the invention as specified in claims 10, 12, 62, and 64.

Regarding claims 43, 49, 94, and 100, the arguments analogous to those presented above for claim 42 are applicable to claims 43, 49, 94, and 100. Lindsay and Hopkins do not appear to recognize determining the size or shape of the defect. However, Fujita discloses determining the size of the defect (Abstract). At the time of the invention, it would have been obvious to a person of ordinary skill in the art to have modified the defect detection disclosed by Lindsay and Hopkins to include determining the size. The motivation for doing so would have been because it is a well known methodology routinely utilized in defect detection and provides greater detail of the defect. Therefore, it would have been obvious to combine Lindsay and Hopkins with Fujita to obtain the invention as specified in claims 43, 49, 94, and 100.

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7. Claims 14 and 66 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lindsay et al. (6,280,573) and Hopkins et al. (5,576,480) as applied to claims 1 and 54 above, and further in view of Burkhart (DE 19632988).

Regarding claims 14 and 66, Lindsay and Hopkins do not appear to recognize calculating a location based on the velocity. However, Burkhart discloses calculating a current location of the defect based on information related to the velocity of the material web (Abstract). Lindsay, Hopkins, and Burkhart are combinable because they are from the same field of endeavor of defect detection. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to have modified the detection of defects using the image disclosed by Lindsay and Hopkins to include using the velocity information to locate defects on the web. The motivation for doing so would have been because it is well known in the art and provides a means to establish the arrival time of the defect in order to repair it. Therefore, it would have been obvious to combine Lindsay and Hopkins with Burkhart to obtain the invention as specified in claims 14 and 66.

Contact Information

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Virginia M Kibler whose telephone number is (703) 306-4072. The examiner can normally be reached on Mon-Thurs 8:00 - 5:30 and every other Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amelia Au can be reached on (703) 308-6604. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Virginia Kibler
06/11/04

MEHRDAD DASTOURI
PRIMARY EXAMINER

